



Doc 5002.02-1

PTO/SB/21 (09-04)

Approved for use through 07/31/2006. OMB 0651-0031

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

<b>TRANSMITTAL FORM</b>  (to be used for all correspondence after initial filing)	Application Number	10/809,317	
	Filing Date	03/24/2004	
	First Named Inventor	G. Ramanath	
	Art Unit	2813	
	Examiner Name	Rodgers, Colleen	
Total Number of Pages in This Submission	30	Attorney Docket Number	5002.02-1

ENCLOSURES (Check all that apply)		
<input type="checkbox"/> Fee Transmittal Form	<input type="checkbox"/> Drawing(s)	<input type="checkbox"/> After Allowance Communication to TC
<input type="checkbox"/> Fee Attached	<input type="checkbox"/> Licensing-related Papers	<input type="checkbox"/> Appeal Communication to Board of Appeals and Interferences
<input checked="" type="checkbox"/> Amendment / Reply	<input type="checkbox"/> Petition	<input type="checkbox"/> Appeal Communication to TC (Appeal Notice, Brief, Reply Brief)
<input type="checkbox"/> After Final	<input type="checkbox"/> Petition to Convert to a Provisional Application	<input type="checkbox"/> Proprietary Information
<input type="checkbox"/> Affidavits/declaration(s)	<input type="checkbox"/> Power of Attorney, Revocation Change of Correspondence Address	<input type="checkbox"/> Status Letter
<input type="checkbox"/> Extension of Time Request	<input type="checkbox"/> Terminal Disclaimer	<input checked="" type="checkbox"/> Other Enclosure(s) (please identify below):
<input type="checkbox"/> Express Abandonment Request	<input type="checkbox"/> Request for Refund	<b>Publications (2); Postcard</b>
<input type="checkbox"/> Information Disclosure Statement	<input type="checkbox"/> CD, Number of CD(s) _____	
<input type="checkbox"/> Certified Copy of Priority Document(s)	<input type="checkbox"/> Landscape Table on CD	
<input type="checkbox"/> Response to Missing Parts/ Incomplete Application	Remarks	
<input type="checkbox"/> Reply to Missing Parts under 37 CFR 1.52 or 1.53		

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT			
Firm Name	PETERS, VERNY, JONES, SCHMITT & ASTON, LLP		
Signature			
Printed name	David J. Aston		
Date	March 9, 2006	Reg. No.	28,051

CERTIFICATE OF TRANSMISSION/MAILING			
I hereby certify that this correspondence is being facsimile transmitted to the USPTO or deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on the			
Signature			
Typed or printed name	Will Dresser	Date	March 9, 2006

This collection of information is required by 37 CFR 1.5. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Attorney Docket No. 5002.02-1  
Customer No. 23308

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Inventor : G. Ramanath, et al. | Art Unit. : 2813  
Serial : 10/809,317 | Examiner : RODGERS, Colleen E.  
Number  
Filed : 03/24/2004 | :  
Title : DIFFUSION | :  
BARRIERS  
COMRPISING  
SELF-ASSEMBLED  
MONOLAYERS


Confirmation : 6500 | Customer  
Number : 23308

## CERTIFICATE OF MAILING or FACSIMILE TRANSMISSION UNDER 37 C.F.R. § 1.8(a)(1)

I hereby certify that this correspondence (along with any referred to as being attached or enclosed) is, on the date shown below, being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to Mail Stop Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria Virginia, 22313-1450, or facsimile transmitted to the U.S. Patent and Trademark Office on the date shown below.

Dated: March 9, 2006

By:



Printed Name: Will Dresser

AMENDMENT AND RESPONSE TO OFFICE ACTION  
MAILED 12/13/2005

Mail Stop Amendment  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

In response to the Office Action of 12/13/2005, having a shortened statutory period for response due 3/13/2006, please amend the above-identified application as set forth below, in accordance with revised amendment practice, 37 CFR §1.121, effective July 30, 2003. A complete listing of all claims, replacing all prior claims in the application, and

Attorney Docket No. 5002.02-1  
Customer No. 23308

including the text of all non-cancelled claims, is attached.

This Amendment and Response is accompanied by a Transmittal Form, a post card, and the following exhibits: Yin et al., "Nanostructured iron-nickel thin films synthesized by electroless polyol deposition," Mater. Phys. Mech. 4:55-61 (2001); and

Kizil et al., "TiN, TaN, and  $W_xN$  as diffusion barriers for Cu on  $SiO_2$ : Capacitance-voltage, leakage current and triangular-voltage sweep tests after bias temperature stress," Thin Solid Films, 449:158-165 (2004).

In the event that a fee is required in connection with the filing of this Amendment and Response, the Commissioner of Patents is authorized to charge the amount of such fee to Peters, Verny, Jones, Schmitt & Aston Deposit Account No. 16-1331.

**Amendments to the Specification** begin on page 3 of this paper.

**Amendments to the Claims** are reflected in the listing of claims, which begins on page 4 of this paper.

**Remarks/Arguments** begin on page 8 of this paper.